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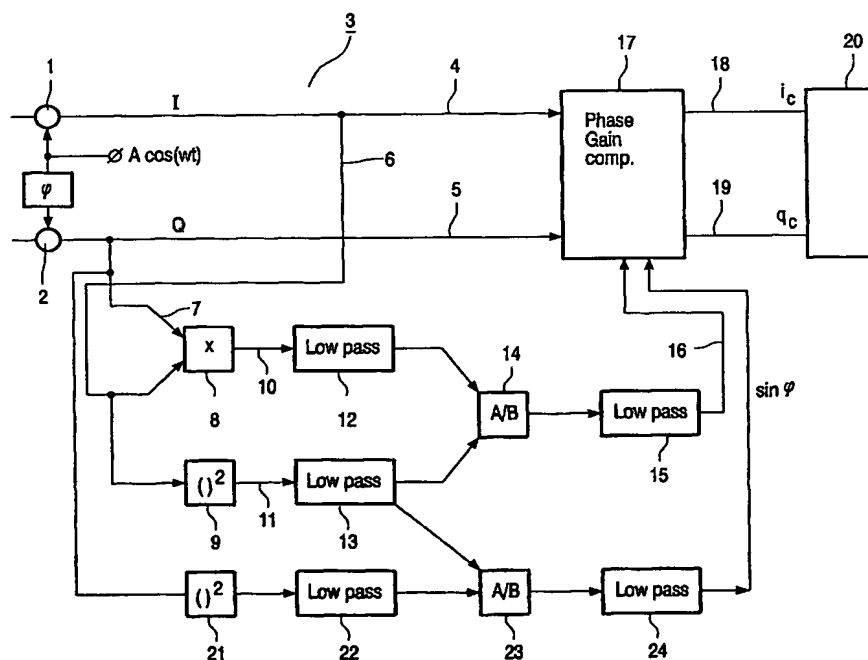
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[Continued on next page]

(54) Title: **PHASE/GAIN IMBALANCE ESTIMATION OR COMPENSATION**



(57) Abstract: The present invention relates to a receiver for estimation or compensation of phase imbalance or gain imbalance utilizing a QPSK modulation and a modulation scheme based on a complex scrambling code. According to the present invention the phase imbalance or gain imbalance is estimated or compensated before synchronisation. Thus, the phase imbalance and gain imbalance will not be able to introduce losses in the further phases of the connection.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 289 048 B1 (JEKEL RICHARD NEWELL ET AL) 11 September 2001 (2001-09-11) column 2, line 33 - line 40 column 3, line 19 - line 55 column 6, line 24 - line 34 column 7, line 14 - line 19 column 7, line 56 - line 66 column 8, line 26 - line 38	1-11
X	US 2002/097812 A1 (WISS JOHN) 25 July 2002 (2002-07-25) page 1, right-hand column, paragraph 19 - page 2, left-hand column, paragraph 19 page 3, right-hand column, paragraph 47 page 3, right-hand column, paragraph 49 figure 5 ----- -/--	1-11

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>GLAS J P F ED - INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS: "DIGITAL I/Q IMBALANCE COMPENSATION IN A LOW-IF RECEIVER"</p> <p>IEEE GLOBECOM 1998. GLOBECOM '98. THE BRIDGE TO GLOBAL INTEGRATION. SYDNEY, NOV. 8 - 12, 1998, IEEE GLOBAL TELECOMMUNICATIONS CONFERENCE, NEW YORK, NY : IEEE, US, vol. VOL. 3, 1998, pages 1461-1466, XP000805154</p> <p>ISBN: 0-7803-4985-7</p> <p>the whole document</p>	1-11
A	<p>CETIN E ET AL: "On the structure, convergence and performance of an adaptive I/Q mismatch corrector"</p> <p>VTC 2002-FALL. 2002 IEEE 56TH. VEHICULAR TECHNOLOGY CONFERENCE PROCEEDINGS. VANCOUVER, CANADA, SEPT. 24 - 28, 2002, IEEE VEHICULAR TECHNOLOGY CONFERENCE, NEW YORK, NY : IEEE, US, vol. VOL. 1 OF 4. CONF. 56, 24 September 2002 (2002-09-24), pages 2288-2292, XP010608841</p> <p>ISBN: 0-7803-7467-3</p> <p>the whole document</p>	1-13

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 6289048	B1	11-09-2001	NONE
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US 2002097812	A1	25-07-2002	NONE
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